

and 3, and page 14, bottom, describing pixel portions and interline portions. No new matter has been entered.

REMARKS

Claim 2 presents a relational formula that depends only upon raw number values, not units. While the variables in the relational formula correspond to various physical parameters and voltage, and the claims specify what units these variables must be in, the relational formula simply describes how the raw values must be set relative to one another when they are in the proper units. Thus, as long as a is measured in μm , d is measured in μm and V_{max} is measured in V these three numbers may be used in the relational formula without regard to any units in the relational formula. Accordingly, the objection to this claim should be removed.

The rejection of the claims over Hattori in view of Morokawa is traversed. As noted previously, Morokawa has been cited only for its structural disclosure appearing in the “Description of the Related Art” section appearing at column 2 of the reference. Hattori, the primary reference, fails to disclose even a basic liquid crystal display device utilizing the liquid crystal layer presently claimed.

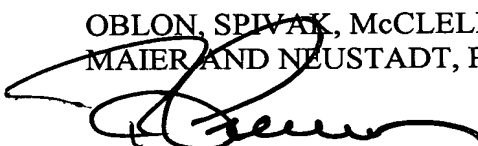
As noted by the above amendment to Claims 1 and 2, the presently claimed liquid crystal layer must comprise a nematic liquid crystal and an amount of chiral dopant sufficient to provide reflection of visible light, and the liquid crystal in interline portions must remain in the FC (focalconic) state. On the contrary, Hattori uses chiral dopants to provide only relatively minor changes in pitch, with no specific control of a single state in the interline portion. Morokawa fails to disclose or suggest anything that would make up for that lacking in Hattori, and the presently claimed Examples and Comparative Example demonstrate the importance of the claimed combination of permanent interline state, (FC; transparent) liquid

crystal layer comprising a nematic liquid crystal with sufficient chiral dopant to provide visible light reflection, and properly arranged and spaced electrodes according to, e.g., the relational formula in Claim 1. When claimed limitations are not met, Comparative Example 1 at specification pages 29ff shows quite poor results, as more fully set forth at pages 30-31 of the present specification.

Accordingly, and because even the combination of Hattori and Morokawa fail to disclose or suggest the invention as presently claimed, Applicants respectfully request the reconsideration and withdrawal of the outstanding rejection, and the passage of this case to Issue.

Respectfully submitted,

OBLON, SPIVAK, McCLELLAND,
MAIER AND NEUSTADT, P.C.



Norman F. Oblon
Registration No. 24,618
Attorney of Record

Richard L. Treanor
Registration No. 36,379

Tel.: (703) 413-3000

Fax: (703) 413-2220

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IN THE CLAIMS

1. (Amended) A liquid crystal display element comprising a front side substrate having a front side electrode, a rear side substrate having a rear side electrode and a liquid crystal layer interposed therebetween wherein the liquid crystal layer is a chiral nematic liquid crystal layer comprising a nematic liquid crystal and an amount of chiral dopant sufficient to provide reflection of visible light and that exhibits a plurality of display states; a display state is changed by a voltage applied across the electrodes, and at least one state among the display states is maintained stably, the liquid crystal display element being characterized in that at least a part of the front side electrode and the front side substrate is transparent; the front side electrode or the rear side electrode is divided into a plurality of electrode regions on its substrate surface so as to form pixel portions and interline portions, the liquid crystal layer in said interline portions remains in a focalconic state, and the maximum space a (μm) between adjacent electrode regions and the thickness d (μm) of the liquid crystal layer satisfy a relational formula of $1.0 \cdot d \leq a \leq 4.0 \cdot d$.

2. (Amended) A liquid crystal display element comprising a front side substrate having a front side electrode, a rear side substrate having a rear side electrode and a liquid crystal layer interposed therebetween wherein the liquid crystal layer is a chiral nematic liquid crystal layer comprising a nematic liquid crystal and an amount of chiral dopant sufficient to provide reflection of visible light and that exhibits a plurality of display states; a display state is changed by a voltage applied across the electrodes, and at least one state among the display states is maintained stably, the liquid crystal display element being

characterized in that at least a part of the front side electrode and the front side substrate is transparent; the front side electrode or the rear side electrode is divided into a plurality of electrode regions on its substrate surface; so as to form pixel portions and interline portions, the liquid crystal layer in said interline portions remains in a focalconic state, the maximum space a (μm) between adjacent electrode regions, the thickness d (μm) of the liquid crystal layer, and the maximum effective voltage V_{max} (V) of a voltage applied to the front side electrode and the rear side electrode satisfy a relational formula of $1.0 \cdot d \leq a \leq d \cdot V_{\text{max}}/10$.